

IN THE CLAIMS:

Please amend claims and add new claims as shown in the claim listing below, which replaces all previous claim listings in this application.

1 - 2. (Cancelled)

3. (Currently Amended) The composition of claim ~~14~~, wherein the carbodiimide crosslinking agent is N-(3-dimethylaminopropyl)-N-ethylcarbodiimide hydrochloride (EDC).

4. (Currently Amended) ~~The composition of claim 1,~~ A composition, comprising:  
a porous or semi-porous implant material comprising a collagen scaffolding having  
particles of demineralized bone matrix (DBM) dispersed within the collagen scaffolding, said  
implant material having been subjected to crosslinking with a carbodiimide crosslinking  
agent under conditions that crosslink the implant material but retain an osteoinductive  
capacity of the DBM, so as to provide an implant material exhibiting a combination of  
osteoconductive and osteoinductive properties, wherein the composition is chemically cross-linked in the presence of N-hydroxysuccinimide (NHS).

5. (Currently Amended) The composition of claim ~~14~~, further comprising one or more growth factors.

6. (Currently Amended) The composition of claim ~~14~~, wherein the composition comprises from 2 to 95 wt% DBM based on the combined weight of DBM and collagen protein.

7. (Currently Amended) ~~The composition of claim 1,~~ A composition, comprising:  
a porous or semi-porous implant material comprising a collagen scaffolding having  
particles of demineralized bone matrix (DBM) dispersed within the collagen scaffolding, said  
implant material having been subjected to crosslinking with a carbodiimide crosslinking  
agent under conditions that crosslink the implant material but retain an osteoinductive  
capacity of the DBM, so as to provide an implant material exhibiting a combination of  
osteoconductive and osteoinductive properties, wherein the composition comprises from 55  
to 85 wt% DBM based on the combined weight of DBM and collagen.

8 – 10. (Cancelled)

11. (Currently Amended) The composition of claim ~~14~~, wherein the DBM particles  
have an average particle size of up to 5 mm.

12. (Currently Amended) The composition of claim ~~14~~, wherein the DBM particles  
have an average particle size ranging from 53 to 850  $\mu\text{m}$ .

13 - 19. (Cancelled)

20. (Currently Amended) The composition of claim ~~14~~, wherein the composition is  
crosslinked under acidic conditions.

21-25. (Cancelled)

26. (Currently Amended) The composition of claim ~~14~~, further comprising an additive selected from the group consisting of collagenase inhibitors, growth factors, antibodies, metalloproteinases, cell attachment fragment(s), and combinations thereof.

27. (Original) The composition of claim 26, wherein the additive is bound to the collagen or DBM.

28. (Original) The composition of claim 26, wherein the additive is not bound to the collagen or DBM.

29-49. (Cancelled)

50. (Currently Amended) The composition of claim ~~49~~52, further comprising one or more growth factors.

51. (Cancelled)

52. (Currently Amended) ~~The composition of claim 49,~~ A composition comprising:  
demineralized bone matrix (DBM); and  
a porous or semi-porous collagen sponge material;  
said DBM in the form of DBM particles dispersed within the collagen sponge  
material; and  
wherein the composition is cross-linked via an amide linkage; and

wherein the composition comprises from 55 to 85 wt% DBM based on the combined weight of DBM and collagen protein.

53. (Currently Amended) The composition of claim 4952, wherein the composition exhibits a capacity to maintain its shape when hydrated and regain its height following compression when hydrated.

54-55. (Cancelled)

56. (Currently Amended) The composition of claim 4952, wherein the DBM particles have a particle size of up to 5 mm.

57. (Currently Amended) The composition of claim 4952, wherein the DBM particles have a particle size of from 53 to 850  $\mu\text{m}$ .

58. (Cancelled)

59. (Currently Amended) The composition of claim ~~58~~60, further comprising one or more growth factors.

60. (Currently Amended) ~~The composition of claim 58,~~ A composition for bone or soft tissue repair, comprising:

a sterile, implantable osteoinductive composition in a paste form that can be injected or packed into a wound site for bone or soft tissue repair, said osteoinductive composition

including an aqueous diluent and demineralized bone matrix (DBM) dispersed within collagen solids, said DBM comprising from 2 to 95% by weight of the osteoinductive composition based on the combined weight of the DBM and collagen solids, said DBM being in the form of particles having an average diameter of up to about 5 mm, said osteoinductive composition further having been subjected to conditions which introduce crosslinking between molecules of said particulate collagen solids and/or between molecules of the collagen solids and the DBM particles, wherein said conditions comprise irradiating the osteoinductive composition with e-beam irradiation.

61. (Cancelled)

62. (Currently Amended) ~~The composition of claim 58,~~ A composition for bone or soft tissue repair, comprising:

a sterile, implantable osteoinductive composition in a paste form that can be injected or packed into a wound site for bone or soft tissue repair, said osteoinductive composition including an aqueous diluent and demineralized bone matrix (DBM) dispersed within collagen solids, said DBM being in the form of particles having an average diameter of up to about 5 mm, said osteoinductive composition further having been subjected to conditions which introduce crosslinking between molecules of said particulate collagen solids and/or between molecules of the collagen solids and the DBM particles, wherein said conditions comprise irradiating the osteoinductive composition with e-beam or gamma irradiation; and

wherein the composition comprises from 55 to 85 wt% DBM based on the combined weight of DBM and collagen solids.

63. (Currently Amended) The composition of claim ~~58~~60, wherein the DBM particles have an average particle size of from 53 to 850  $\mu\text{m}$ .

64. (Currently Amended) The composition of claim ~~58~~60, also comprising a plasticizer.

65. (Currently Amended) The composition of claim ~~14~~4, also comprising a plasticizer.

66. (Currently Amended) The composition of claim ~~49~~52, also comprising a plasticizer.

67. (New) The composition of claim 7, further comprising one or more growth factors.

68. (New) The composition of claim 7, wherein the carbodiimide crosslinking agent is N-(3-dimethylaminopropyl)-N-ethylcarbodiimide hydrochloride (EDC).

69. (New) The composition of claim 7, wherein the DBM particles have an average particle size of up to 5 mm.

70. (New) The composition of claim 7, wherein the DBM particles have an average particle size ranging from 53 to 850  $\mu\text{m}$ .

71. (New) The composition of claim 7, wherein the composition is crosslinked under acidic conditions.

72. (New) The composition of claim 7, further comprising an additive selected from the group consisting of collagenase inhibitors, growth factors, antibodies, metalloproteinases, cell attachment fragment(s), and combinations thereof.

73. (New) The composition of claim 72, wherein the additive is bound to the collagen or DBM.

74. (New) The composition of claim 72, wherein the additive is not bound to the collagen or DBM.

75. (New) The composition of claim 52, wherein the composition is crosslinked under acidic conditions.

76. (New) The composition of claim 52, further comprising an additive selected from the group consisting of collagenase inhibitors, growth factors, antibodies, metalloproteinases, cell attachment fragment(s), and combinations thereof.

77. (New) The composition of claim 76, wherein the additive is bound to the collagen or DBM.

78. (New) The composition of claim 76, wherein the additive is not bound to the collagen or DBM.

79. (New) The composition of claim 60, wherein the composition is crosslinked under acidic conditions.

80. (New) The composition of claim 60, further comprising an additive selected from the group consisting of collagenase inhibitors, growth factors, antibodies, metalloproteinases, cell attachment fragment(s), and combinations thereof.

81. (New) The composition of claim 80, wherein the additive is bound to the collagen or DBM.

82. (New) The composition of claim 80, wherein the additive is not bound to the collagen or DBM.

83. (New) The composition of claim 62, wherein the DBM particles have an average particle size ranging from 53 to 850  $\mu\text{m}$ .

84. (New) The composition of claim 62, further comprising one or more growth factors.

85. (New) The composition of claim 62, wherein the composition is crosslinked under acidic conditions.



86. (New) The composition of claim 62, further comprising an additive selected from the group consisting of collagenase inhibitors, growth factors, antibodies, metalloproteinases, cell attachment fragment(s), and combinations thereof.

87. (New) The composition of claim 86, wherein the additive is bound to the collagen or DBM.

88. (New) The composition of claim 86, wherein the additive is not bound to the collagen or DBM.

89. (New) The composition of claim 7, also comprising a plasticizer.